

RECEIVER CODEC SUPER SET CONSTELLATION GENERATOR

ABSTRACT OF THE DISCLOSURE

A technique is proposed to accurately estimate the Network CODEC levels for each PCM code a server modem generates. These levels are affected by the digital impairments such as Digital attenuation PAD in the trunk, the Robbed Bit Signaling, the type of CODEC (μ -law or a-law - or non standard), and by analog impairments such as loop distortion, noise, inter-modulation distortion, echo. At client modem equalizer output good estimates for these levels are derived. By detecting RBS pattern of the trunk, and using averages of decode levels of similar RBS slots, more accurate data points are obtained. By further replacing these levels with the closest CODEC receive levels, good accuracy is obtained. Non-monotonic points are detected and eliminated. An upper limit is set for constellation points to avoid saturation of the receiver. IMD correction is applied to the decode levels. Ideal points that are not signaled, are added if possible. When PAD-detection or Codec detection fails, PAD is set to 0dB and the constellation is based on originally received and averaged data points. Techniques are presented for V.90 type modem constellation generation.